

Claims

1. A system for use in client/server computing comprising:

a) a client that interfaces with an applications program;

5 b) a server in communication with the client that responds to a request from the applications program communicated to the server by the client for services available through said server; and

c) a user interface manager that communicates with the server by means of an asynchronous communications channel between the server and the client and further

10 wherein the user interface component responds to a user interface message sent from the server to display information to a user.

2. The system of claim 1 wherein the server transmits a language neutral message across the asynchronous communications channel with information for displaying to the user

15 and wherein the user interface manager includes an interpreter for the message.

3. The system of claim 2 wherein the user interface manager includes a custom message interpreter for converting the language neutral message into a language specific message on a display

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4. The system of claim 3 additionally comprising a resource file and wherein the user interface manager custom message interpreter accesses resources in said resource file during display of said language specific message.

25 5. The system of claim 1 wherein the applications program includes a print capability and wherein the server is executing on a print server computer for servicing print requests from one or more client computers.

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6. A system for use with a printer comprising:

a) a client that interfaces with an applications program having a print capability;

b) a print server in communication with the client that controls a printing of data communicated to said print server by the client; and

5 c) a user interface manager that communicates with the print server by means of an asynchronous communications channel with the print server and further wherein the user interface manager responds to a user interface message sent from the print server to display information to a user.

10 7. The system of claim 6 further comprising a user display and wherein the message sent to the client user interface manager is a language neutral message that is interpreted by the user interface manager and converted to another representation for the user display.

8. The system of claim 7 wherein the client user interface manager converts a globally
15 unique identifier from the server to a user understandable message on said display.

9. The system of claim 6 comprising a print spooler residing on a client computer and wherein print spooler receives data from the applications program for transmission to the print server and also wherein the print spooler communicates a message to the user
20 interface manager upon receipt of a print request from the applications program.

10. The system of claim 9 herein the user interface manager sets up an asynchronous notify channel to the print server for passing data related to the print request from the client print spooler to the server.

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11. The system of claim 10 wherein the print server sends a language neutral message through the asynchronous notify channel based on status of a print job being serviced by the print server.

12. The system of claim 11 wherein the print server transmits messages into the user interface manager in response to a set up message from the user interface manager component.

5 13. The system of claim 6 wherein the user interface manager interprets the message and loads an executable component that responds to receipt of said message based on the contents of said message.

10 14. The system of claim 13 wherein the executable component accesses resources used by the executable component to display a message on a display monitor.

15 A method of printing data originating from one or more clients on a printer comprising:

15 a) providing a print spooler interface for an application to communicate with a client which in turn communicates with a print server; said print spooler interface enabling the applications to call a service routine on the print server by means of a procedure call initiated by the application; and

20 b) responding to language neutral messages from the print server relating to a status of one or more printers communicating with the print server by interpreting the message and presenting a display to said message understandable by a user relating to the status of the said one or more printers.

25 16. The method of claim 15 wherein the client user interface component converts a globally unique identifier to a user understandable message.

17. The method of claim 15 wherein the print spooler residing on a client computer and wherein the print spooler receives data from the applications program for transmission to the server and also wherein the print spooler communicates a message to the user interface manager upon receipt of a print request from the applications program.

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18. The method of claim 15 wherein the user interface component sets up an asynchronous notify channel to the print server related to the print request from the spooler to the server.

5 19. The method of claim 15 wherein the print server sends a language neutral message through the asynchronous notify channel based on status of a print job being controlled by the print server.

10 20. The method of claim 19 wherein the user interface manager accesses an executable component upon receipt of the language neutral message from the print server and wherein the executable component accesses resources used by the executable component to display a message.

15 21 A method of displaying one or more messages at a client computer based on a server status comprising:

a) providing an interface for an application to communicate with a client computer which in turn communicates with a server; said interface enabling the application to call a service routine on the server by means of an asynchronous remote procedure call initiated by the application; and

20 b) responding to language neutral messages from the server relating to a status of said server by interpreting the language neutral message and presenting a display in response to receipt of said language neutral message understandable by a user relating to the status of the said server.

25 22. The method of claim 21 wherein a client user interface manager executing on said client computer converts a globally unique identifier to a user understandable message.

30 23. The method of claim 21 wherein the client comprises a print spooler residing on the client computer and wherein the print spooler receives data from the application for transmission to the server and also wherein the print spooler communicates a message to an interface manager upon receipt of a print request from the applications program that

causes the interface manager to monitor status information conveyed to the client computer by said server.

24. The method of claim 23 wherein the user interface component sets up an asynchronous notify channel to the print server related to the print request from the print spooler to the server.

25. A computer readable medium for use in client/server computing comprising instructions for:

a) providing an interface for an application to communicate with a client which in turn communicates with a server; said interface enabling the application to call a service routine on the server by means of an asynchronous remote procedure call initiated by the application; and

b) responding to language neutral messages from the server relating to a status of said server by interpreting the language neutral message and presenting a display in response to receipt of said language neutral message understandable by a user relating to the status of the said server.

26. The computer readable medium of claim 25 wherein a client user interface manager executing of said client establishes a bi-directional communications channel with said server.

27. The computer readable medium of claim 25 wherein the server sends a globally unique identifier based on a status of said server and wherein the client converts said globally unique identifier to a user understandable message.

28. The computer readable medium of claim 25 wherein the client comprises a print spooler residing on a client computer and wherein the print spooler receives data from the application for transmission to the server and also wherein the print spooler communicates a message to the user interface manager upon receipt of a print request

from the applications program to monitor status information conveyed by said server relating to a status of a printer.

29. The computer readable medium of claim 28 wherein the user interface component
5 sets up an asynchronous notify channel to the print server independent of the print request from the print spooler to the server.

30. The computer readable medium of claim 25 wherein the user interface manager
10 accesses an executable component upon receipt of the language neutral message from the print server and wherein the executable component accesses resources used by the executable component to display a message.